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Losing Confidence Over Time: Temporal Changes in Self-Esteem Among Older Children and Early Adolescents in Japan, 1999-2006

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Abstract

We examined temporal changes in self-esteem among elementary and middle school students in Japan. Previous research has shown that self-esteem decreased among various sectors of the population, from middle school students to adults between 1984 and 2010 in Japan. However, it was unclear whether such temporal changes are also present at earlier stages of development (e.g., in elementary school) and in individual subgroups (e.g., each gender and developmental stage). Identifying such boundary conditions of temporal change will contribute to a better understanding of how cultures change over time. We analyzed representative and large-sample time-series data collected by the Japanese government in 1999 and 2006. Results showed that self-esteem decreased among elementary and middle school students regardless of gender and developmental stage. We suggest that from an early stage of development and among a broad range of the population in Japan, people's general self-evaluations became more negative between 1999 and 2006.

Keywords

self-esteem, confidence, temporal change, cultural change, Japan

Self-esteem is one of the most frequently researched concepts in psychology. There are variations in how self-esteem is defined by scientists, but a common aspect is that it refers to the positivity of a person's global evaluation of the self (e.g., Baumeister, Campbell, Krueger, & Vohs, 2003). Many studies have investigated how self-esteem is related to psychological and physical well-being (e.g., Baumeister et al., 2003; Diener, 1984; Myers & Diener, 1995) or social behavior (e.g., Leary, Tambor, Terdal, & Downs, 1995; Taylor & Brown, 1988), which has contributed to a better understanding of human psychology and behavior.

Temporal Changes in Self-Esteem in the United States

Self-esteem has been investigated not only as a phenomenon at a single point in time or over a short period of time but also how it changes over the years. By investigating how psychological tendencies (e.g., self-esteem) change over time, we can better understand how a culture/society changes over the years and how socio-economic environments influence human psychology and behavior (e.g., Twenge, 2015; Twenge & Campbell, 2001).

Studies have described how self-esteem has changed over the years in the United States. Twenge and Campbell (2001) conducted a cross-temporal meta-analysis of studies that used Rosenberg's (1965) Self-Esteem Scale (RSES; for a review of cross-temporal meta-analysis, see Twenge, 2011). Results showed that self-esteem increased among college students in the United States between 1968 and 1994 (Twenge & Campbell, 2001). In addition, they conducted the same analysis on studies using the Coopersmith Self-Esteem Inventory (SEI; Coopersmith, 1967) and showed that children and early adolescents' self-esteem decreased from 1965 to about 1980, and then increased into the 1990s. Moreover, Gentile, Twenge, and Campbell (2010) showed that self-esteem increased among middle school, high school, and college students between 1988 and 2008 by performing the same type of analysis on RSES scores.

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Temporal Changes in Self-Esteem in Japan

Compared with the literature investigating the United States, there has been little research on temporal changes in self-esteem in other cultural contexts. In Japan, Oshio, Okada, Mogaki, Namikawa, and Wakita (2014) investigated temporal changes in self-esteem in Japan between 1984 and 2010. As in previous research (Gentile et al., 2010; Twenge & Campbell, 2001), they conducted a cross-temporal meta-analysis of articles published in peer-reviewed Japanese journals that measured RSES. They found that self-esteem decreased among both students (middle school, high school, and college students) and adults (aged 18 to 60, excluding college students) between 1984 and 2010 in Japan.[1]

The finding that self-esteem decreased in Japan over time is intriguing and thought-provoking because it seems paradoxical. It has been suggested that Japanese culture has become more individualistic at least in some respects (Hamamura, 2012; Ogihara, 2016b; Ogihara, Fujita, et al., 2015; Ogihara, Uchida, & Kusumi, 2015). Given this, one might expect Japanese people to have higher self-esteem. This is because in individualistic societies, people have many opportunities to interact with new people and to choose more desirable relationships (e.g., Yuki & Schug, 2012). Consequently, it is adaptive to have higher self-esteem in individualistic cultures (Falk, Heine, Yuki, & Takemura, 2009; Zhang & Li, 2014). Indeed, this is the case in the United States where culture has changed toward greater individualism (e.g., DeWall, Pond, Campbell, & Twenge, 2011; Greenfield, 2013; Twenge, Abebe, & Campbell, 2010; Twenge, Campbell, & Gentile, 2012, 2013) and self-esteem has gone up over time (Gentile et al., 2010; Twenge & Campbell, 2001). Why this has not occurred in Japan may be because, historically, Japan has not been an individualistic culture. As a result, rapid changes toward individualism may have caused people to experience conflicts and difficulties in adapting to it (Ogihara & Uchida, 2014; Ogihara, Uchida, & Kusumi, 2014).

However, the previous research in Japan did not sufficiently examine temporal changes in self-esteem by subgroup. To be clear, temporal changes in self-esteem by developmental stage and gender were not fully investigated. Identifying possible boundary conditions of the phenomenon should be a key to revealing the question of why self-esteem has decreased in East Asian cultures. We detail these limitations and how they can be overcome below.

Temporal Changes in Self-Esteem by Developmental Stage in Japan

The previous research (Oshio et al., 2014) has two limitations. First, it leaves unclear whether self-esteem also decreased in the segment of the population that is younger than middle school age. The RSES was developed for people in mid-to-late adolescence and has been administered mainly to college students. When measuring the self-esteem of children, scales other than RSES are often used (e.g., Coopersmith SEI; Coopersmith, 1967; for details, see Twenge & Campbell, 2001). As it was based on a cross-temporal meta-analysis of the RSES, it is understandable that this research did not sufficiently look at the pre-middle-school segment of the population. However, it is important to identify from which developmental stage temporal change emerges to uncover the mechanisms or processes of cultural/societal change. This logic is also found in research examining the developmental stage from which cultural difference emerges. Prior research has shown that cultural differences in certain psychological and behavioral tendencies emerge after entering elementary school (e.g., Duffy, Toriyama, Itakura, & Kitayama, 2009; Imada, Carlson, & Itakura, 2013). This implies that elementary school might be an important place for the acquisition of cultural practices or values. Given that self-esteem is essentially influenced by cultural factors (e.g., Heine, Lehman, Markus, & Kitayama, 1999; Schmitt & Allik, 2005), declines in self-esteem should be found not only for middle school students but also for elementary school students. Hence, in this study, we examined whether or not self-esteem among elementary school students also decreased.

Second, it is not clear whether self-esteem decreased among both middle and high school students, as the previous research summed the average scores of middle schoolers and high schoolers and analyzed them together (Oshio et al., 2014). It is possible that only one of the two decreased while the other remained constant, or that one of the two increased slightly while the other decreased significantly. This combining of scores may have been necessitated by small sample sizes (the total sample size was 39), which may be unavoidable because psychological research generally collects data from university students (indeed, in their research, the sample size for university students was larger, $k = 131$). Moreover, the authors noted that the interpretation of the result should be taken with a grain of salt as the coefficient of determination in the regression analysis did not reach significance ($R^2 = .21$, $p = .09$).

To overcome these two limitations, we examined temporal changes in self-esteem among elementary school students and middle school students separately by analyzing time-series archival data, which is methodologically different from the previous research (cross-temporal meta-analysis). Time-series data separate the population data into data about different demographic groups, thus enabling a more detailed look at temporal change in different segments of the population. There are various approaches to tracing the psychology and behavior of the past, each with its advantages and its disadvantages (Kashima, 2014). By taking a different approach to tracing temporal changes in culture/society, we tried to compensate for the limitations of the previous

cross-temporal meta-analysis, as multifaceted approaches lead to a more valid and fruitful discussion. These complementary methods will thus advance the scientific understanding of the phenomenon.

Temporal Changes in Self-Esteem by Gender in Japan

Just as it is important to examine temporal changes in self-esteem according to developmental stage to identify boundary conditions and gain a better understanding of the underlying mechanisms or processes of cultural/social changes, it is also important to look at these changes according to gender. For example, if gender differences in self-esteem decreased because scores in males remained stable but scores in females increased, then the differences in how the social environment has changed for each gender (e.g., relative increases in social power and status for females) might be associated with this change.

Oshio et al. (2014) did not focus on temporal changes in self-esteem by gender because the number of studies which had reported average scores of RSES by gender was small, and analysis by gender made the sample sizes smaller. Instead, in a recent paper, they did examine whether gender differences in self-esteem decreased in Japan over the years (Okada, Oshio, Mogaki, Wakita, & Namikawa, 2015). They analyzed 50 studies published between 1982 and 2013 that reported RSES scores according to gender and age demographics (from middle school students to the elderly). They found that the average score for males was higher than that for females, and that gender differences in self-esteem in Japan had reduced slightly from the 1980s to the 2010s (1980s: Hedges's g = .23, 1990s: g = .17, 2000s: g = .13).

However, this study (Okada et al., 2015) has two limitations. First, although it indicated that overall gender differences decreased over time, it did not break down these temporal changes in self-esteem for each gender. Specifically, there are three plausible types of temporal change that can account for the fact that male scores were higher than female scores and the overall reduction in the difference between genders: (a) the average male score has decreased greatly whereas the average female score has increased slightly, (b) the average male score has decreased whereas the average female score has not changed, and (c) the average scores both for males and females has decreased but the magnitude of change was larger for males than for females. How we interpret the overall decrease in the differences between the genders will differ depending on which type of change underlies it. If we find gender differences in the type of change, we can identify some of the socio-cultural changes that affect self-esteem. Thus, to understand how Japanese culture and people have changed, it is desirable to look at temporal changes in self-esteem according to gender.

A second limitation of the past study is that it did not break down temporal changes in gender difference in self-esteem by developmental stage (Okada et al., 2015). The previous study calculated gender difference over time by analyzing the RSES scores of all developmental stages (from middle school students to the elderly) together. Hence, the finding that there has been temporal decline in gender differences may have resulted from decreases in the ratio of research on younger generations, which yield larger gender differences (Okada et al., 2015; Orth, Trzesniewski, & Robins, 2010). Because few (or no) studies have examined self-esteem at each stage of development particularly long ago, the investigation of temporal changes in self-esteem by developmental stage is difficult or impossible because of cross-temporal meta-analysis's dependence on past research. As noted above, most research collected data from university students, so there is little research collecting data from younger and older segments of the population (e.g., middle school students and the elderly) than university students, especially long ago. Thus, the investigation of temporal changes in gender differences in self-esteem according to developmental stage is difficult.

An analysis of time-series data can also overcome these two limitations because it basically focuses on specific populations over time. Hence, in this study, we looked at temporal changes in self-esteem among elementary and middle school students by gender and developmental stage.

Present Research

In addition to the limitations raised above, there is a further limitation to previous research (Oshio et al., 2014) in terms of sampling. Previous research was based on scores from past studies, which makes it difficult to determine whether the samples for each study were representative of the specific populations for the years they represent. For example, an average self-esteem score obtained from students at one middle school in 1990 might have been used as the overall average self-esteem score for middle school students in Japan in 1990. Thus, it is possible that the temporal changes in self-esteem may actually be regional differences due to the use of different regional populations for different studies' samples. To insist that self-esteem has decreased among some populations in Japanese society/culture, it is desirable to measure self-esteem using more representative samples. Thus, in the current research, we investigated temporal changes in self-esteem by analyzing time-series data that are both more representative and come from a large sample.

In summary, previous research did not examine how temporal changes in self-esteem may vary according to developmental stage or gender. Moreover, it was based on data for which the representativeness of the samples is unclear. Therefore, in the present research, we examined temporal changes in self-esteem by developmental stage (elementary school and middle school students) and gender by analyzing

Table 1. Sample Sizes by Gender and School Level in the 1999 and 2006 Surveys.

		Elementary school	Middle school	Total
1999	Boy	559	578	1,137
	Girl	516	590	1,106
	Total	1,075	1,168	2,243
2006	Boy	541	528	1,069
	Girl	564	510	1,074
	Total	1,105	1,038	2,143

a large sample of time-series data that are more representative of the population.

Method

Data

We analyzed representative and large-sample time-series data collected by the Japanese government (Cabinet Office, Government of Japan, 2000, 2007). Data collection was conducted twice, in 1999 and in 2006. The purpose of these surveys was to capture values, lifestyle patterns, and beliefs among elementary and middle school students in Japan.

Respondents

The respondents were students in elementary school (fourth, fifth, and sixth grade: aged 9 to 12 years) and middle school (seventh, eighth, and ninth grade: aged 12 to 15 years) in Japan. The government collected data from all over Japan using a multistage random sampling method (in 1999: 250 locations with a response rate of 74.8%, in 2006: 200 locations with a response rate of 59.5%). Data were gathered from all 47 prefectures,[2] from four sizes of municipality (big city, mid-sized city, small city, and village), and from both genders, making these surveys more representative. The sample sizes were indicated in Table 1. A total of 2,180 elementary school students and 2,206 middle school students participated in the surveys.

Question Items

In the surveys, participants reported to what extent the sentence "I have self-confidence in myself [3]" applied to themselves by using 4-point scale (1 = *applies*, 2 = *somewhat applies*, 3 = *does not apply very much*, 4 = *does not apply*). In the 1999 survey, the anchors also included "5 = *do not know*," so to compare the results from 1999 and 2006, we excluded participants who chose this anchor (the rate of such participants was low: 5.4% boys and 3.5% girls in elementary school, 1.6% boys and 2.4% girls in middle school). For ease of interpretation (i.e., higher scores indicate higher self-esteem), we reversed the scores and subtracted 1 (i.e., 0 = *does not apply*, 1 = *does not apply very much*, 2 = *somewhat applies*, 3 = *applies*).

Results

Temporal Changes in Self-Esteem by Gender and School Level

The average scores of self-esteem by gender and school level in 1999 and 2006 are shown in Figure 1. We conducted a three-way ANOVA with gender (boy or girl), school level (elementary school or middle school) and year (1999 or 2006) as between-subject factors.

We found significant main effects for gender, $F(1, 4307) = 110.91$, $p < .001$, $\eta_p^2 = .03$; school level, $F(1, 4307) = 138.99$, $p < .001$, $\eta_p^2 = .03$; and year, $F(1, 4307) = 98.68$, $p < .001$, $\eta_p^2 = .02$. Self-esteem for boys (M =1.52, SD = .90) was higher than that for girls (M = 1.25, SD = .86; d = .31), which was consistent with previous research (e.g., Feingold, 1994, Kling, Hyde, Showers, & Buswell, 1999; Okada et al., 2015).

Self-esteem for students in elementary school (M =1.53, SD = .90) was higher than that for students in middle school (M = 1.24, SD = .85; d = .34), which was also consistent with prior research showing that self-esteem decreases in the teen years (e.g., Ogihara, 2016a; Robins, Trzesniewski, Tracy, Gosling, & Potter, 2002; Twenge & Campbell, 2001).

Most importantly, self-esteem in 2006 (M = 1.26, SD = .89) was significantly lower than that in 1999 (M = 1.51, SD = .87; d = .28).[4] No two-way interactions or three-way interaction were significant (Fs < .91, ps > .34, η_p^2s < .01). Therefore, self-esteem decreased from 1999 to 2006, regardless of gender and school level.

The reason why the 2006 self-esteem scores were lower than 1999 scores might be due to the lack of an option for "do not know" in 2006 because people who wanted to choose "do not know" might have chosen more modest answers in 2006, given the prevalence of modesty norm in Japan (e.g., Tafarodi, Shaughnessy, Yamaguchi, & Murakoshi, 2011). In this case, such answers would be "1: does not apply very much" or "2: somewhat applies," because "0: does not apply" and "3: applies" are more assertively clear (i.e., it would be unusual for someone wishing to answer "do not know" to choose a clear answer) and previous research has shown that Japanese tend to avoid extreme answers in Likert-type scales (e.g., Chen, Lee, & Stevenson, 1995). So, we re-calculated the 1999 average scores as if all those who chose "do not

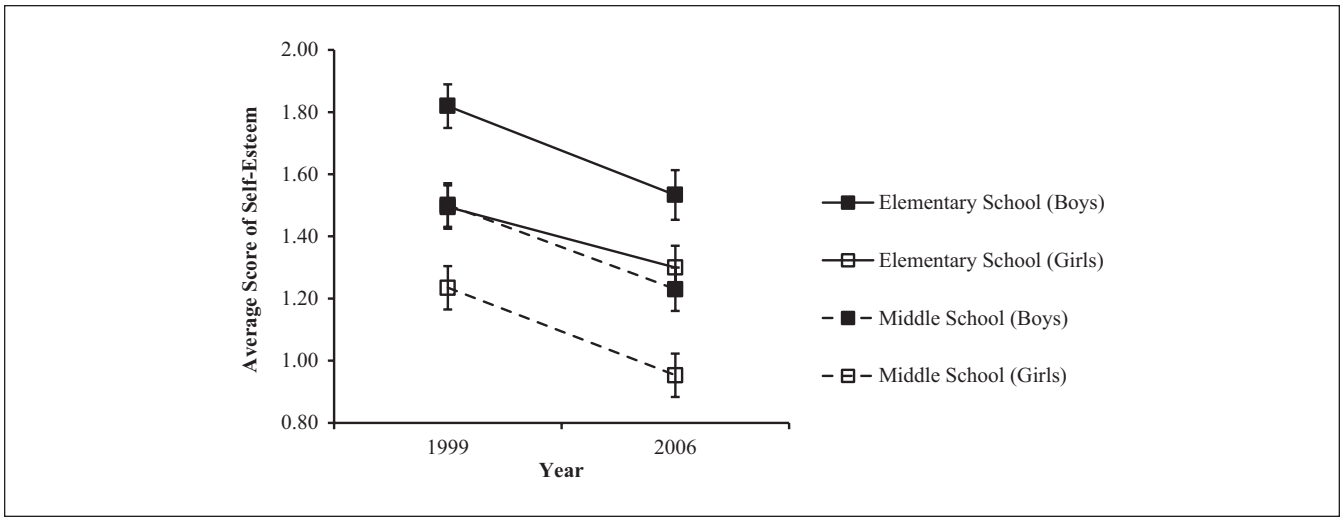

Figure 1. Self-esteem among elementary and middle school students in 1999 and 2006.
Note. Error bars represent 95% confidence intervals.

know" answered "1: does not apply very much," which is the lowest possible score in this hypothetical situation.

The modified average scores for each subgroup in 1999 were 1.78 (0.04 lower than the original score; $SD = 0.87$) for elementary school boys, 1.48 (0.01 lower than the original score; $SD = 0.83$) for elementary school girls, 1.49 (0.01 lower than the original score; $SD = 0.84$) for middle school boys, and 1.23 (identical to the original score; $SD = 0.80$) for middle school girls. We then conducted an analysis that was identical to the initial one, and the results of the analyses were consistent. We found significant main effects for gender, $F(1, 4378) = 107.72$, $p < .001$, $\eta_p^2 = .02$, identical to the original effect size; school level, $F(1, 4378) = 131.51$, $p < .001$, $\eta_p^2 = .03$, identical to the original effect size; and year, $F(1, 4378) = 87.05$, $p < .001$, $\eta_p^2 = .02$, identical to the original effect size. Self-esteem for boys ($M = 1.51$, $SD = .89$) was higher than that for girls ($M = 1.24$, $SD = .85$; $d = .31$; identical to the original effect size). Self-esteem for students in elementary school ($M = 1.52$, $SD = .89$) was higher than that for students in middle school ($M = 1.23$, $SD = .84$; $d = .33$; .01 lower than the original effect size). Most importantly, self-esteem in 2006 ($M = 1.26$, $SD = .89$) was significantly lower than that in 1999 ($M = 1.49$, $SD = .86$; $d = .27$; .01 lower than the original effect size). No two-way interactions or three-way interaction were significant (Fs < 1.25, ps > .26, η_p^2s < .01; identical to the original effect size).[5]

Thus, we found that the results were consistent with those in the original analysis, though the effects became slightly weaker. This weak effect might be because the proportion of people who chose "do not know" was relatively small. Therefore, although a minor portion of the decrease might be explained by the difference in anchors, we still found self-esteem decreases from 1999 to 2006.

Temporal Changes in Gender Differences

Although the three-way interaction was not significant, to examine whether gender differences reduced over time, we calculated effect sizes for gender differences among elementary school and middle school students at each time point. We found that the gender difference slightly decreased among elementary schoolers ($d = .38$ in 1999, $d = .26$ in 2006), whereas it was fairly stable among middle schoolers ($d = .32$ in 1999, $d = .34$ in 2006).

We also conducted an analysis that was identical to the initial one as if all those who chose "do not know" answered "1: does not apply very much," which is the lowest possible score in the hypothetical situation, and the results of the analyses were consistent. We found that the gender difference slightly decreased among elementary schoolers ($d = .35$ in 1999, .03 lower than the original effect size; $d = .26$ in 2006), whereas it was fairly stable among middle schoolers ($d = .32$ in 1999, identical to the original effect size; $d = .34$ in 2006).

Discussion

In this study, we examined temporal changes in self-esteem among elementary and middle school students in Japan by analyzing representative and large-sample time-series data. Past research has shown that self-esteem decreased across the population, from middle school students to adults in Japan between 1984 and 2010 (Oshio et al., 2014). However, temporal changes in self-esteem by developmental stage were not sufficiently examined. Specifically, it was not evident whether decreases in self-esteem were also present among elementary school students. We found that elementary school students' self-esteem decreased between 1999 and 2006, which extends the existing literature (Oshio et al.,

2014). This finding is consistent with previous research showing cultural differences emerge after entering school (Duffy et al., 2009; Imada et al., 2013), implying that elementary school might be an important cultural factor. Moreover, it was unclear whether or not self-esteem declined for both middle school and high school students. Our study indicated that at least middle school students' self-esteem declined between 1999 and 2006, which confirms and supplements the previous literature (Oshio et al., 2014). These findings suggest that from a very early stage of development, people's general evaluations of the self became more negative in Japan between 1999 and 2006.

Our research also extends previous findings by investigating changes in self-esteem by gender. Prior research indicated that gender difference in self-esteem in Japan became slightly smaller from the 1980s to the 2000s (Okada et al., 2015). Yet, they did not show how the average scores for each gender changed over this time span. Our results indicated that self-esteem went down for both boys and girls, showing that across a broad range of the population, people's global self-evaluations declined over the years. Among elementary school students, the slope of the decrease for girls was slightly more moderate than that for boys, which lead to a modest reduction in gender differences (d = .12). This result is consistent with previous research showing that gender differences became slightly smaller over time (Okada et al., 2015). In contrast, gender differences among middle school students were stable between 1999 and 2006.

Furthermore, by analyzing the more representative time-series data, we overcame the limitation of possibly non-representative samples found in previous studies (Okada et al., 2015; Oshio et al., 2014). In cross-temporal meta-analyses, samples might not actually be representative of the population at specific time especially in the past. In contrast, time-series surveys basically aim to grasp the psychological or behavioral characteristics of more representative population. Considering that each approach has its advantages and its disadvantages (Kashima, 2014), it is desirable to look at temporal changes in culture/society with multiple approaches. As a result, our findings were consistent with the previous studies (Okada et al., 2015; Oshio et al., 2014), supplementing and extending the previous literature.

Taken together, we found that self-esteem decreased among older children and early adolescents regardless of developmental stage and gender. Thus, we suggest that from a very early stage of development and among a broad range of the population, people's general evaluation of the self became more negative between 1999 and 2006 in Japan.

One may be skeptical about concluding that self-esteem decreased between 1999 and 2006 based on data from two points in time. These findings might have been affected by random errors, wherein it was only by chance that the scores in 1999 were high and the scores in 2006 were low. However, looking at data from other years, we do not think that this is the case. Compared with the self-esteem scores from other years between 1984 and 2010, the scores from 1999 and 2006 do not seem exceptional or appear to be outliers (Oshio et al., 2014). This is also the case for each generational group (ages from 20s to 60s) in other datasets (Ogihara, Uchida, & Kusumi, 2016). Considering these findings together, it is highly unlikely that the 1999 and 2006 scores were outliers or occurred by chance. Hence, we think that the conclusion that self-esteem decreased between 1999 and 2006 is valid.

Limitations and Future Directions

Our study found that self-esteem decreased among elementary and middle school students between 1999 and 2006. But this is a relatively short span of time (i.e., 8 years). This is due to the difficulty of collecting older data in Japan (Ogihara, 2015; Ogihara, Fujita, et al., 2015) compared to in the United States (e.g., Gentile et al., 2010; Twenge & Campbell, 2001). Although, based on previous findings, it is estimated that the decline spanned from the 1980s into the 2010s (Ogihara et al., 2016; Oshio et al., 2014), it is desirable to examine temporal changes in self-esteem among elementary and middle school students over a longer span of time.

It should also be explored in the future why self-esteem has decreased among a broad range of people in Japan. Although we addressed possible explanations to this question in the introduction, the issue remains unclear. To answer this question, given that number of studies that describe temporal changes in self-esteem in Japan is small, it would be desirable to clarify the details of these changes. Specifically, finding their boundary conditions (e.g., time period, subgroup, and area) could also contribute to answering this question.

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Notes

1. Decreases in self-esteem between 1996 and 2009 may have occurred broadly in East Asia, as there is evidence that it also occurred in China during this period (Liu & Xin, 2015).
2. Prefectures are Japanese subnational jurisdictions that are bigger than cities and towns. A prefecture is similar to states in the United States.

3. The original wording in Japanese is "自分に自信がある [*jibun ni jishin ga aru*]." In this research, we regard self-confidence as almost identical to the concept of self-esteem. We have two reasons for this. First, self-confidence is regarded as an important component of self-esteem (e.g., Schmitt & Allik, 2005; Tafarodi & Milne, 2002). When self-esteem is defined as the positivity of a person's global evaluation of the self (e.g., Baumeister et al., 2003), self-confidence also fits this definition. In the Rosenberg's (1965) Self-Esteem Scale (RSES), "I am able to do things as well as most other people." or "I feel I do not have much to be proud of. (reverse-scored)" are items that reflect the aspect of self-competence. It is difficult to predict how self-esteem and self-confidence might differ in their patterns of temporal change. Second, by using the existing literature on self-esteem, we can discuss temporal changes in Japan in more detail. To our knowledge, there was no research examining temporal changes in self-confidence in Japan.
4. Although no interaction effects were found, to compare the degrees of temporal changes with those found in other research, we report the effect sizes of temporal changes for each subgroup. The effect sizes for boys at elementary school, girls at elementary school, boys at middle school, and girls at middle school were *d*s = .32, .22, .32, and .35, respectively.
5. The effect sizes of temporal changes for boys at elementary school, girls at elementary school, boys at middle school, and girls at middle school were *d*s = .27 (.05 lower than the original effect size), .21 (.01 lower than the original effect size), .31 (.01 lower than the original effect size), and .34 (.01 lower than the original effect size), respectively.

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